FINAL REPORT
PRINCE EDWARD ISLAND FREE TRADE MARKET OPPORTUNITIES STUDY

March 1990

Prepared for: **The Steering Committee, Free Trade Opportunities Study**
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1.0 INTRODUCTION

1.1 Background

This report presents the analysis conducted during a three-phase study of the Northeastern United States Export Opportunities for Prince Edward Island Firms, in light of the Free Trade Agreement. It was produced by The DPA Group Inc., Halifax, in association with Smith Green & Associates, Charlottetown, and Enterprise Management Consultants, Charlottetown. The study was co-sponsored by the Prince Edward Island Department of Industry, and the Atlantic Canada Opportunities Agency (ACOA).

The objectives of the study were to:

- identify areas in which existing Prince Edward Island producers and entrepreneurs should increase their export marketing efforts in order to best take advantage of the Canada/U.S. Free Trade Agreement;

- identify areas of possible expansion or start-up in response to opportunities created by Free Trade;

- identify the needs of small and medium enterprises to enable them to take advantage of the opportunities presented by the new trade regimes.

The following five sectors received priority study attention;

- Food Business;
- Biotechnology;
- Services;
- Health Care Systems; and
- Education Technology.

1.2 Methodology

The work plan for the Free Trade Market Opportunities Study was divided into three broad phases:

- **Phase I - Opportunity Identification;**
- **Phase II - Opportunity Assessment;**
- **Phase III - Marketing Strategy/Implementation Plan.**

During the first phase of the study, the consultants developed an inventory of Prince Edward Island's capabilities in the five priority sectors, conducted interviews with P.E.I. industry representatives, government officials, and those knowledgeable in the Northeastern United States market place, and reviewed the Free Trade Agreement. This analysis lead to a "long list" of potential export market opportunities among the five priority sectors. Discussions with study Steering Committee members resulted in a "short list" of nine export opportunities which then became the subject of the Phase II work. A copy of the Phase I report is available in Appendix A.

Phase II - Opportunity Assessment, involved brief Northeastern United States market assessments for the nine "short listed" export opportunities, comprised of six food products and three non-food products. For each export opportunity the consultants assessed Prince Edward Island's current supply and potential, Northeast United States market characteristics and specific product opportunities. The Phase II report is available in Appendix B.

Based on the results of the Phase II report, and discussions with Steering Committee members, it was agreed that the following five export opportunities warranted further study in Phase III:

- lobster, especially value-added lobster products;
- cultured mussels, especially value-added mussel products;
- rock crab;

- potatoes, especially value-added potato products; and
- aqua culture supplies and services.

During Phase III, preliminary market assessments for the above five product areas were developed, using the following sources of information:

- a market research trip was made to Boston, Massachusetts. During this trip the consulting company visited representative grocery store chain outlets and fish markets. In person and telephone interviews were conducted with Canadian Consulate office staff, food retailers, brokers and distributors;

- before and after this trip, a number of telephone interviews were held with Northeastern United States market representatives; and P.E.I. supplies; and

- a review was made of previous studies, relevant trade magazine articles and import/export statistics.

1.3 Organization of the Report

The remainder of this report is organized as follows:

- **Chapter 2.0 - Recommendations for Study Sponsors** - presents an overview of the P.E.I. business climate in light of the Free Trade Agreement, describes the government's role in the encouragement and support of P.E.I.'s exports, and presents recommended approaches for federal and provincial governments in their export support programs.

The following appendices are also included:

- **Appendix A - Phase I Report;**
- **Appendix B - Phase II Report; and**
- **Appendices C through G - Specific Marketing Strategies.**

The marketing strategies are formatted such that they can be separately-bound, stand-alone documents distributed to existing and potential P.E.I. exporters.

2.0 RECOMMENDATIONS FOR STUDY SPONSORS

2.1 Overview

Most P.E.I. business persons have not yet recognized or appreciated the opportunities and challenges presented by the Free Trade Agreement (FTA). Many business persons interviewed during the course of this study indicated it was too early for them to identify new markets or product opportunities resulting from the FTA. They expressed the opinion that the rules are not yet understood, the playing fields are not yet level, and the "mind set" of competing in a wider, more accessible market is just starting to sink in. Also, many Island businesses are already successfully competing in the U.S. and will continue to do so regardless of the FTA.

As a result, the majority of the P.E.I. business community has not given the FTA much consideration; however, those who are successfully involved in U.S. markets share a common list of attributes worth noting, namely:

- a commitment to client loyalty through the cultivation of long standing business relations with their customers over many years;
- the provision of special attention to their customers in these markets;
- constant communication with their U.S. customers;
- consistency in quality gained through a sincere commitment to high quality standards achievable in P.E.I;
- personal service, combined with a full understanding of the unique needs of the customer; and

- an understanding of U.S. market specifications\requirements and demands.

These factors are not surprising and are relevant to any successful market strategy. These successful marketers also indicated in a positive manner that freer trade means less government intervention in a regulatory sense with resulting increased emphasis on free enterprise and the relevant efficiencies (and increased competitiveness) that this process brings.

The FTA is only one tool to stimulate the search for new market opportunities and new product development. Well developed and implemented marketing strategies combined with adequate capital for new product development and market penetration strategies will make it happen. A competitive entrepreneurial spirit guided by "market driven" strategies will make it happen. The development of new and improved products and services to increase penetration of served markets and to retain existing customers will make it happen.

The small entrepreneurial base tends to over task itself in a multiplicity of management functions, with production, finance, and personnel management traditionally having priority within limited management resources. This leaves marketing low on the management list of activities.

Within this environment, how can governments and their agencies play a positive role to support Island businesses as the FTA unfolds?

2.2 Government's Role

Federal and provincial governments and their agencies have an important role to play in the encouragement and support of P.E.I.'s exports. Policy and program development should concentrate on two thrusts namely;

1. reducing regulatory constraints and barriers; and

2. supporting marketing initiatives of Island exporters.

Governments' support functions should focus on three elements:

1. Market intelligence gathering and promotions.

2. Encouraging coordination and cooperation among Island exporters and among government's own programs and initiatives.

3. Ensuring the broader context of business planning and development is an integral part of our industrial development policies. Incorporating marketing, production, and finance in an integrated fashion in our provincial and individual corporate strategies is essential.

2.3 Recommended Approaches

Support programs designed for marketing assistance should consider a number of key issues appropriate to P.E.I. business circumstances and the FTA environment. At the same time, however, governments must make a conscious effort to minimize exposure and vulnerability to countervail action.

*** They are less likely to be deemed to be countervailable subsidies.**

Targeted production subsidies that result in stronger price competitiveness of Island export products are vulnerable to U.S. countervailing duty. Instead, government support should be "generally available" in nature providing Island exporters with useful market information, new technologies, and improved accessibility to the export markets.

*** Targeted marketing effort on behalf of the Island exporters is required.**

Traditionally P.E.I. exporters have been price takers, not price makers. This has been due to the fact we have been selling commodities rather than products and labels, recognized for their uniqueness and quality. The added value approach to our production and marketing efforts will necessitate a shift in our strategies towards gaining recognition as a unique quality producer, targeting a price point geared to our place in the market as quality "product" producers, not just commodity producers. Innovative marketing/selling will be a key to achieving greater U.S. market penetration. Excellence in marketing and selling functions will be required in order to succeed in the competitive American market.

*** There should be more coordination of effort among programs.**

The feedback received from key informants and our cursory examination of marketing programs available to P.E.I. exporters suggests a strategy that focuses on P.E.I. needs and opportunities is required. Addressing the challenges presented by sophisticated marketing techniques requires the most effective use of limited public resources. P.E.I. provincial government programs should be reviewed and modified as appropriate to ensure that they continue to meet the competitive business needs of entrepreneurs who face keen and sophisticated international marketeers. This will also lead to more effective coordination.

*** Promotion should carry themes of quality and uniqueness of the "Island's pollution free" products.**

P.E.I. has a good reputation as a "quality" producer of potatoes. Cultivated mussels from P.E.I. hold a market niche due to its higher quality features. This reputation is well earned and can also be garnered with other Island exports, such as other fish products. The perception that our pristine pollution free environment can produce higher quality products is a real one which should be capitalized on in our market promotion strategies. Iceland has successfully marketed its fishery production at premium prices in this manner

for some time. A quality excellence symbol recognized and certified by government can be another promotional tool in this "quality" niche.

*** Cooperative marketing approaches among industry participants should be encouraged.**

Competitors' marketing efforts at premiere events such as the Boston Seafood Show demonstrate an excellence that P.E.I. producers must be able to match. A cooperative "Island Quality" presentation utilizing recognizable Island themes such as "Anne", fish, potatoes, tourism, could be incorporated at venues such as the Boston Seafood Show and other trade shows. The development of an Island quality theme would imply that high standards of production are achievable among a majority of industry participants.

*** Joint venture arrangements with U.S. industry counterparts should be encouraged.**

Joint venture deals can bring U.S. risk dollars required to stimulate new product development and commercialization of new markets. This, combined with the sharing of respective technologies will create new opportunities. As well a joint venture will also be able to take advantage of a U.S. firm's traditional market presence and existing distribution systems.

While many Canadian companies have successfully taken the joint venture route, determining which U.S. market penetration strategy is most appropriate (joint venture, distributorships, sales through brokers, etc.) depends on the particular product and market considered. Recommendations are presented in Appendices C through G for the five products analyzed in some detail during this study.

*** The establishment of a commercial trade office representing P.E.I. industry in a U.S. city.**

The feasibility of establishing "commercial" (not Gov't) trade office in a U.S. centre should be examined. This office would be staffed by one or two experienced, (in the private

sector) effective marketers who have good knowledge of P.E.I.'s industries and resources. The office would have the ability to undertake marketing efforts with its own staff and/or to contract out various industry experts for specific and appropriate marketing services on behalf of P.E.I. companies. The office would need to be viewed as a non-government agency, designed to assist Island industry efforts in market intelligence, market strategies and sales in the U.S.

APPENDIX A

PHASE I REPORT

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PEI FREE TRADE
MARKET OPPORTUNITIES STUDY

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1.0 INTRODUCTION

1.1 The Free Trade Agreement

This report will examine the impact of the Free Trade Agreement (FTA) on selected import sectors with the PEI economy. If the FTA affects other factors that may impede trade, (i.e. non-tariff barriers), mention is made of these influences as well. Canadian and U.S. tariff schedules are presented for each product and service in the five sectors examined, but the impact of the FTA on each good or service is only discussed in relation to the elimination of U.S. tariff or non-tariff barriers. The objectives and scope of the FTA are summarized below:

- to eliminate barriers to trade in goods and services;
- to establish predictable rules, secure access and fair competition;
- to reduce significantly impediments to cross-boarder investment;
- to establish effective procedures and institutions for the joint administration of the Agreement and the resolution of disputes; and
- to lay the foundation for further bilateral and multilateral cooperation to expand and enhance the benefits of the Agreement.

Under the Agreement tariffs are eliminated on the following basis:

- some are eliminated on the Agreement entering into force on January 1, 1989;

- some are eliminated in five equal steps, most starting on January 1, 1989; and

- some are eliminated in ten steps, most starting on January 1, 1989.

Tariffs[1]

Prior to the FTA approximately 70% of goods traded between Canada and the United States entered the other's market duty-free. On the remaining 30%, Canada applies duties nearly twice as high as the United States.[2] However, U.S. tariffs primarily apply to value-added exports. Consequently, the FTA should provide new opportunities in value-added production that previously faced tariffs in the U.S.

Eliminating tariffs is expected to lower prices for consumers, lower input costs to Canadian industry and expand export markets. Canadian products will become more competitive at home and abroad enabling Canadian firms to expand domestic processing and manufacturing.

1.2 Non-Tariff Barriers

To a large extent PEI trade with the United States has been affected more by non-tariff than by tariff barriers. Only a small portion of PEI exports or potential exports fall within the tariff areas. Tariffs on fresh and frozen fish have been very small.

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[1] A tariff is a fee charged when goods are brought into a country from another country. The level of tariff is typically expressed as the rate of duty and may be levied as specific, ad valorem or a combination.

- Specific: a flat charge per physical unit imported
- Ad Valorem: a percentage of the value of the good imported.
- Combination: include both a specific and an ad valorem charge.

[2] Canada's New Free Trade Agreement, *Tariffs*, External Affairs Canada.

Non-tariff barriers which need to be taken into account in any assessment of new market opportunities include:

- exchange rates
- Canadian Government fiscal policies, including interest rates and taxation
- more demanding regulatory requirements in Canada re packaging, additives, preservatives, and general health and sanitary enforcement than in the case of USA competitors
- at the same time, increased inspection of imports by the USA Food and Drug Administration to ensure regulatory compliance
- increased paper work at border crossing points
- US countervails on selected products
- difficulties in export business financing, in light of high interest rates
- general productivity, competitiveness, and marketing capability issues
- lack of broad understanding of the US business culture, including its marketing infrastructure
- problems relating to differences in scale, e.g. between PEI production capability and the size of potential USA market demand

The existence of barriers reduce the significance of the FTA in encouraging new PEI entries into the United States market. Even where there is an interest in potential new USA market opportunities, the majority of PEI firms do not have resources which can be

devoted exclusively to isolating real opportunities in that market. Owner operators or Chief Executive Officers of PEI firms typically carry a variety of responsibilities, among which marketing is only one. For that reason they have deferred examining FTA opportunities until the rules become clearer, the playing fields are truly level, and there is a supporting infrastructure in place. In some situations one-on-one support would be extremely useful for new entrants attempting to gain access to that market. This is an expensive approach which could be warranted only in consideration of scale. One-on-one techniques are being developed through the Atlantic Canada Opportunities Agency headquarters in Moncton.

Despite the barriers and problems identified above, a number of PEI firms have traditionally and are continuing to export a considerable amount of product to the United States. These people represent a base of experience and market awareness for the PEI business community to draw upon in its efforts to undertake new ventures in that country, and means should be established whereby they can share their expertise. The approach of these exporters has been to cultivate individual customers over the years, and to pay special attention to them and to the market they represent. Special attention to quality assurance, consistency of supply, and personal contact have been representative indicators of success. What they hope for as a result of the FTA is that there will be less Government intervention and improved stability in trading relationships in the USA; that as all tariffs are finally dropped and the borders have a reduced number of custom brokers, there will be a reduction in paperwork required; and that border inspections and harassment will be reduced in the FTA climate.

1.3 Approach to Product/Market Selection

The major new FTA-related opportunity is in value-added food products, which are scheduled for tariff reduction. There are some challenges towards achieving these opportunities at present, in a large measure because of the dynamics of the industry and difficulties in managing the labour pool. Within fisheries, for example, there is a glut of lobster, herring and mackerel in late spring and early summer, when processors must cope

with the catch. To attempt a value-added product they must freeze part of the catch until the rush is over, at which time labour frequently becomes more difficult to engage, - having accumulated minimum required contributions for UI benefit eligibility.

At present fish processing plants run at about 20%-25% of annual capacity. It is difficult for a processor to consider investing in expensive processing equipment when this equipment will be used for about two months of each year. Thus, there are pragmatic barriers to accessing the FTA induced market which stem from the internal operations and dynamics of the various industries.

Several exporters raised attitude problems on the part of both producers and staff as factors which discourage new market searches. These include problems of dependability, consistency, and quality of supply; establishing and maintaining product niches; and worker productivity.

Thus in selecting possible areas for market exploration, emphasis should be placed on those products for which there are established producers on PEI, even single producers who could provide a core effort around which spin-off development could occur. It does not seem useful to provide a product list for which there is a market in the USA but no potential producer on PEI. Thus potential markets have been identified only where there is a basis for assuming that the product can be prepared here.

In considering market areas, some PEI shippers tend to favour areas with which they have a direct transportation link, either by truck or air. That is, they prefer to avoid en route transfers because of the unpredictability of delivery. Thus cities which are served directly by Air Canada represent preferred markets in the USA; as Air Canada expands it freight connections, market areas also expand. Canadian Airlines points can be accessed through the Halifax airport.

2.0 FOOD BUSINESS SECTOR

New FTA opportunities in this sector are primarily with respect to value-added or table-ready fish and vegetable products, which will benefit from tariffs reductions. Tariffs on processed foods will reduce over a period of ten years, which provides an opportunity to prepare for increasing the output of higher value end products.

In the case of the fishery the FTA offers more in the way of dispute settling mechanisms than in new trading opportunities.

PEI has a small advantage over other Maritime Provinces in respect to export of agricultural products, due to the fact that only about 25% of farm production by value is influenced by supply management arrangements.

2.1 Fish Products

2.1.1 Supply Analysis

The predominant fish specie is lobster, which accounted for almost 75% of the total value of PEI fish landings in 1988 ($56M), with landed weight of over 22M pounds. This is a 45% increase over 1983 and 1985, and provides the basis for considerable expansion of effort in this fishery. Increased lobster landings in recent years make it desirable to develop the USA market in order to avoid the kind of glut which affected the market in 1989; there is also a need to present the lobster product to the market in different ways.

Other major shellfish species (1988 landings) include oyster (3.1M lbs), mussel (3.1M lbs), and crab (2.6M lbs). Other shellfish are available in smaller quantities.

The shellfish sector of the industry is highly labour intensive, and may not have the capacity to respond readily to significant fluctuations in demand. It requires a stable and predictable market which offers largely incremental rather than surge growth.

Herring is second to lobster in landed weight, at over 21M lbs. (1988) although its value was slightly less than $2M. The major use of herring has been for the extraction of roe, with the meat being used for fish meal production, or simply discarded as waste. There are potential added value opportunities within this specie. There is also an available supply of redfish (12.5M lbs), cod (8.5M lbs), mackerel (5.5M lbs), as well as hake (3.3M lbs) and flounder (2.6M lbs).

Aquaculture has been most successful in the mussel fishery, which has grown from nothing to almost $5M value in little more than one decade; techniques for the winter mussel fishery have been developed here. The trout, salmon, and oyster fishery are also examples of successful commercial application of aquaculture techniques, but with limited export capability.

Fish specialty products, such as smoked fish of various kinds, could be made available to special markets in the USA, particularly the ethnic market. However, the major opportunities would seem to be with lobster, rock crab, herring, oysters, and mussels, which are available in greater supply.

The raw materials provide the basis for an expanded processing effort to provide the US market with convenience packages for the consumer, hospitality, and institutional markets. PEI could benefit from an increased value-added effort, but few processors have the market confidence, financial strength and technology available to enable them to venture into this market.

Based on the supply analysis, the following fish products were identified for priority attention in Phase I:

- cultured mussels
- processed lobster
- processed rock crab
- processed herring
- processed mackerel
- red fish

2.1.2 Implications of Free Trade

The fish products industry benefits from its proximity to the largest consuming market, the United States; yet, Canadian exports to the U.S. are hindered by tariff and non-tariff barriers. Tariffs are imposed on the major fish product categories: fresh and frozen groundfish, value-added products such as breaded/battered fish and prepared meals and thirdly crab products. Non-tariff barriers include anti-dumping and countervailing duties and "Buy America" provisions.

Tariffs on relatively unprocessed fish (fresh and frozen fillets) were low in the United States and will either be eliminated immediately or over a five year schedule. Tariffs are high on further processed fish which discourages Canadian production for export. Removal of tariffs on these products is expected to provide new opportunities for domestic processing operations. The tariff will be eliminated over the 10 year reduction schedule. The crab products industry is already exporting competitive products. The elimination of the tariff on crab products will enable the exporters to remain competitive. The tariff on these products will be completely removed by 1998.

Tariff reduction or elimination on ingredients, packaging materials and equipment used in fish processing will reduce input costs and may encourage new capacity in Canada.

Trade dispute settlement mechanisms are expected to impose increased discipline on the use of anti-dumping and countervailing duties. This would lead to greater security of access to the U.S. market.

A list of the tariff elimination schedule for PEI fish and fish products is provided in Exhibit 2.1 on the following page.

EXHIBIT 2.1: TARIFF ELIMINATION SCHEDULE FOR PEI FISH AND FISH PRODUCTS

PRODUCT	TARIFF RATE CANADA	TARIFF RATE UNITED STATES
I. IMMEDIATE		
Cultured Mussels	Free	Free
Lobster - Fresh or Frozen	Free	Free
Herring - Fresh or Frozen Unfilleted	Free	Free
Herring - Smoked	Free	Free
Mackerel - Fresh or Frozen Unfilleted	Free	Free
Mackerel - Dried, Salted	Free	5%
Mackerel - Smoked	Free	2.5%
Redfish	Free	Free
II. FIVE YEAR		
Mackerel Canned	12.7%	6%
III. TEN YEAR		
Lobster - prepared or preserved	6%	10%
Crab	8% to 8.2%	5% to 11%
Crabmeat - Canned	8.2%	5% to 11%
Herring	8%	4% to 8%
Herring - Salted	Free	4%
Herring - Canned	Free to 8%	8%
Herring - Dried, Salted	Free	4%
Prepared Meals	6% to 17.5%	10%

2.1.3 Market Potential

Processed Lobster

The conventional fresh lobster industry has significant competition in the Boston, Glochester area, particularly in light of the new carapace size regulations which make it illegal to sell in many States smaller lobsters which are legally landed on PEI. The traditional smaller size lobster produced by PEI waters is therefore vulnerable in terms of their export potential to New England, such as in brine packed lobsters. Fresh processed lobster and popsicle style frozen product are affected only in New England, which represents 15% of the consuming market.

Lobster categories are:

- fresh cooked;
- fresh uncooked;
- frozen popsicle style.

The conventional practice of only shipping where Air Canada flies is a constraint to growth. If this is done, and the logistics of transshipping worked through, the lobster industry is likely to continue to see the kind of growth it has seen in the past five years.

Cultured and/or Processed Mussels

These product: are an example of a somewhat trendy movement to the upper-end value-added seafood market. The three island packaging plants which have become established over the past ten years are part of a $5 million plus industry that has come out of nowhere. Cultured PEI mussels are well suited to the supply side criteria of this market study.

The product is currently shipped by truck to Boston, and transhipped by air to all parts of the United States. Mussels are highly perishable so the pattern has been to sell them

directly to fish distributors who also carry fresh salmon, mackerel, and other crustacean products. The high quality of the PEI cultured mussel is a better product than that from New England, where dredging for mussels is practiced.

Processed Herring, Processed Mackerel, Processed Red Fish

These three products are grouped together because the smoking, vacuum packaging, and existing presentation practices are almost identical. The distribution is the same, the fish buyer is the same party in each case, and the limited availability of each specie mitigates against substantial growth.

These three products are generally classified as low-end products. Whether salted, marinated, pickled, smoked or fresh, they fit into the commodity category in the eyes of most United States fish buyers. The only movement of these products out of the commodity category is through smoking practices, used in conjunction with very high quality packaging. This is being done by at least one PEI processor. The Food Technology Centre is experimenting in modified packaging to sustain the freshness of PEI products.

There are hundreds of fish smoking operations along the Eastern U.S. seaboard. In order to be successful against this competition, Island smoke product must be of very high quality.

Summary Comment

From discussions with both Island processors and U.S. buyers and distributors, it is apparent that the value added sector of the fish industry must move to a more global approach in their marketing practices. The market in the United States does not stop in New England, and it does not stop where Air Canada flies.

2.2 Agricultural Products

2.2.1 Supply Analysis

PEI producers have established the capability to produce a range of products which could be sold in the international market, including: potato; beef, swine and sheep; cole crops (brussel sprouts, cabbage, rutabagas); carrots; and varieties of berries. The province also offers an established vegetable and flower seed producer. There is a possible market for jams, processed meats and vegetables. The major opportunity would seem to be in the processed potato, which is the product in most ready supply.

A problem for unprocessed potatoes in the US market is a shortage of adequate storage that will ensure quality for customers from late Spring until early Fall. There is a need for year-round supply to supermarket chains and institutions, which is difficult to guarantee at present.

The Food Technology Centre (FTC) which is located on the UPEI campus has undertaken new initiatives in support of the food services sector, including a number of problem-solving tasks for shippers; e.g. varied presentation of mussels, methods for maintaining fresh foods in a fresh condition when they reach the New England market, etc. It is too early in the life of the FTC for new value-added products to have been identified, but new market intelligence will be very useful to the FTC at this time.

One area which requires consideration is the potential market in the USA for organically grown foods: is the so-called "Green Market" widespread or is it confined by location and class? What kinds of foods does it require, with what assurances? Will it pay premium prices, and at what level? Is this a viable market for PEI producers to consider entering? Will this market accept only organically grown products, or any "environmentally friendly" product, and package? Should PEI farmers be encouraged to "go organic", and if so, to what extent?

The Dominion Research Station (Experimental Farm) has developed expertise in production technology which could be applied to the growth of organic foods for environmentally aware consumers.

Based on the supply analysis, the following agricultural and other food products were identified by the consultants for priority attention in Phase I:

- value added potato products
- cole crops
- value added berry products
- bottled spring water

2.2.2 *Implications of Free Trade*

There is a wide variety of tariffs applied to the international trading of processed fruit and vegetable products. These range from duty free to 20% in Canada. In general the Canadian rates are about the same as United States tariffs. The existing tariffs on fresh fruits and vegetables will be phased out over 10 years. However, for a twenty year period from the date of implementation, both countries retain the right to apply a special duty on these products based on defined "depressed price conditions."

Bulk imports of fruits and vegetables for processing will remain subject to regulation under the Canada Agricultural Products Standards Act.

Technical standards and regulations are common in processed food and generally have a major impact on trade. Regulations normally deal with product composition, purity, quality, container sizes and labelling.

Value-Added Potato Products: With the removal of tariffs under the FTA fresh and processed potato products are likely to find a larger market in the United States.

Cole Crops: Cole crops will be in a stronger position as U.S. tariffs are significant and are considered to be a deterrent to increased Canadian exports.

Value-Added Berry Products: Fresh and frozen blueberries are tariff free and there should continue to be substantial two way trade in this product. The elimination of tariffs on processed strawberries (prepared, jams and jellies), should make these products more competitive in the United States.

EXHIBIT: 2.2 TARIFF · ELIMINATION SCHEDULE FOR PEI AGRICULTURAL PRODUCTS

PRODUCT	TARIFF RATE CANADA	TARIFF RATE UNITED STATES
III. TEN YEAR (1998)		
Fruits and Vegetables - Prepared or Preserved	12.5% to 20%	5% to 20%
Potatoes - Frozen	10% - 17.5%	10% to 17.5%
Cole Vegetables	$.22/kg plus 5% to $.066/kg plus 5% (min. 5% to 15%)	5.5% to 25%
Jams and Jellies	10% to 20%	3% to 20%
Blueberries - Frozen	15%	Free
Strawberries - for processing	$0.0661/kg but not less than 10%	14%
Strawberries - preserved	$.1102/kg but not less than 17.5%	$.017/kg

Other Food Products

Bottled spring water does not face any tariffs in the United States and will maintain its tariff free status. Canada imposes a 10.2 percent tariff which is scheduled for elimination by 1998.

EXHIBIT 2.3: TARIFF ELIMINATION SCHEDULE FOR BOTTLED SPRING WATER

PRODUCT	TARIFF RATE CANADA	TARIFF RATE UNITED STATES
III. TEN YEAR		
Bottled Spring Water	10.2%	Free

2.2.3 Market Potential

Value Added Potato Products

Prepared potato products conform to every leading trend in the consumption of food products today. The United States is almost five years ahead of Canada in the trend towards eating more meals outside the home. Nearly 50% of the food consumed in the U.S. is eaten in restaurants and fast food establishments. Value added potato products match well with two buzz words popular in the food sector today: grazing, and convenience foods.

The french fry was the first move towards a value added potato product. The consumer acceptance of convenience foods has spurred the growth of a second wave of product.

This second generation of value added convenience potato products includes prepared potato skins, whole pre-cooked potatoes, stuffed potatoes and institutional products.

Cole Crops

The development of quality cole crops on the Island began in 1955 with the development of the first plant in Sherwood. The quality of cole crop production in PEI is un-paralleled in Eastern Canada. Carrots, rutabagas, cabbage and parsnips have seen some success in New York and the Caribbean as commodity items already.

Oxford Frozen foods is preparing to move substantial amounts of cole crops through their plant in Oxford, N.S. in order to market the PEI cole crops through the United States. This program began in 1989 and will continue into the 1990's as the growth in convenience foods continues, and as the tariff reduces from its maximum 25%. The most recent development in the value added area of vegetable crops is the introduction of frozen processed carrots, turnip, etc. as side entries in prepared foods.

Value Added Berry Crops

Blueberries, raspberries, strawberries and black berries have long been a fresh product entry on the domestic market. The value added dimension comes into play with the evolution of North America's demand for "pure", "no preservatives", "no cholesterol" products. Value added berry products in yogurt, muffins and ice cream are expected to increase.

The current adage of "no preservatives" on the label of yogurt is a boon to the processed berry industry. The frozen technology is advancing at a rapid rate, and local berry products maintain their physical integrity, their chemical characteristics, and their appearance of fresh product.

Bottled Spring Water

Bottled spring water is a very topical a subject in the food and beverage industry. The North American movement towards clean living and "pureness" is reflected in a 15% growth rate per year of bottled water consumption. Pollution, acid rain, radiation residue, and the green house effect have positively effected the growth of the bottled water industry. Nearly 60% of United States households include bottled water in their weekly grocery purchases. The quality of the drinkihg water in the U.S. is decreasing, and the fact is widely known. Industry giants like Perrier have had a bigger marketing budget than PEPSI and 7-Up combined.

France and Spain recognized the market for pure water long before North America. European water quality has never been traditionally high, and increasing levels of industrial pollution and acid rain have worsened the situation. Companies like EVIAN, VOLVIC and VITTEL ship water from France and Spain into the United States. Canada still has the image of "the Switzerland of the North". That our water is pure and unpolluted is accepted as fact. Although the marketing costs related to bottled water are very high, maintenance of this image may allow Canadian producers to enjoy a strong presence in the bottled spring water industry.

Transportation costs from Prince Edward Island to the United States is only 50% of what the European companies must pay. PEI bottled water could enjoy a strong market presence in the United States, given that water can be shipped from France in a competitive environment. As an indication of market size e.g. the present demand for the 1.5 litre bottle is estimated at 7,700 truck loads per year in the U.S..

3.0 BIOTECHNOLOGY SECTOR

3.1 Supply Analysis

Biotechnology involves the application of biological sciences to commercial products and processes. In the agri-food sector it includes products which modify food properties or contribute to the efficiency of plant and animal production. Its primary applications of interest to PEI is with respect to forestry, health science, food processing, veterinary medicine, and aquaculture, including marine medicine and foods. Some of these will be discussed in our review of the product sectors identified in the terms of reference.

Conversion of advances in biotechnology to commercial opportunities will be greatly assisted on PEI by the establishment of the Atlantic Veterinary College at the University of PEI. The decision to relocate the DOA Pathology Laboratory from Sackville to Charlottetown will add further strength, as will scientific staff at UPEI. The work of UPEI scientists in preserving the mussel fishery from the demoic acid threat has been one outstanding example of the productive relationship between science and commerce in this province.

PEI has been doing a considerable amount of innovative work in the biotechnology field, and has established a limited export capability. That is to say, there are only a small number of operations in this field and product exploration is almost operator specific.

- plant culture at the Elite Seed Potato farm, for the production of disease free seed potatoes, is one of only two such operations in the world and accounts for the high standing of PEI in the seed potato field.

- (The province has already conducted a special marketing mission to the USA concerning the marketing of seed potatoes in the USA.

- berry tissue culture for the export of disease-free strawberry plants has been developed at WestTech Agriculture; this seed provides a hardy, high-yield plant which has been sold in Spain, Florida, and South America.

- vaccines for the prevention of fish diseases have been developed by Aqua Health at West Royalty Industrial Park in support of aquaculture operations.

- work is currently underway at AVC on research into the production of foods for aquaculture farms.

Based on the supply analysis, the following biotechnology products were identified by the consultants for priority attention in Phase I:

- application of stem culture technology for the USA market; and
- vaccines for prevention of fish diseases.

3.2 Implications of Free Trade

The FTA is not expected to have an impact on the biotechnology sector. The cross boarder trade that exists does not face tariffs in Canada or the United States. Administrative procedures in this sector often impede trade.

3.3 Market Potential

Disease Free Strawberry Plants

WestTech Agriculture produces tissue-culture strawberry plants for resale to local strawberry growers as well as to export markets in Florida. WestTech is currently growing eight different varieties to meet their existing markets, however, is capable of doing other

varieties if requested. Existing prices for their strawberry plants normally fall between $68.00 and $72.00 per thousand plants, depending on the variety. The company does their own direct marketing, through personal sales calls and directly follow up, to a central Florida location where the truck shipments are broken down and distributed to appropriate growers. Their production facilities consist of a laboratory, processing equipment, and cold storage facilities.

The market potential in the southern states is very attractive. While PEI has made some inroads in this area, it is estimated that strawberry plants shipped from Nova Scotia currently maintain a larger market share in Florida and very large strawberry nurseries in California are still major suppliers to the Florida market. California growers can produce plants cheaper, enjoy reduced transportation costs to this area, grow more plants per acre, and have a longer season in which to grow the strawberry plants. Therefore, it is unlikely that PEI producers could effectively compete in the California market.

The overall U.S. market for strawberry plants was estimated by one source to equal 115 million plants. Comparatively, the Canadian market is estimated at 15 million plants. PEI's natural advantages mentioned above, combined with the current U.S. interest in Island grown strawberries, makes this market appear to be one worth pursuing. However, WestTech knows this market intimately and can be expected to exploit it to full advantage. What is of interest is the possibility of additional applications of stem culture technology for the USA market, such as in blueberry plant culture.

Vaccines for Prevention of Fish Diseases

Aqua Health produces vaccines for the prevention of disease for almost all species of fish and shellfish cultures grown in commercial fish farms. Aqua Health is the only Canadian company to develop, produce, and sell vaccines of this nature. The company currently has distribution outlets in Idaho, British Columbia, Copenhagen, Finland, Oslo, and the United Kingdom. Depending on the species and the appropriate method of application, the

vaccines may be applied through emersion, by spraying, and or by injection. Currently, work is being done to examine the possibility of oral application.

The main market for fish vaccines at this time is to fish hatcheries. In New England, a large number of hatcheries are located in Maine. The five major hatcheries are: Ocean Products, Atlantic Salmon, Kennebec Agriculture, New England Fish Farm Enterprises, and Dead River Hatcheries. The first four hatcheries mentioned grow salmon while Dead River Hatcheries is involved with trout.

While the concept of vaccinating all fish grown has become more widely accepted, commercial fish farmers still have the choice of buying vaccinated versus non-vaccinated fish for their stock. In Maine alone, there are 36 different fish farm operations owned by 22 different operators. At 65% of these farms raise "skin" fish while the remaining 35% grow shell-fish species.

Ocean Products, located in Portland, Maine operates two major hatcheries in the area accounting for roughly 55% of all fish sold to fish farm growers. In speaking with the manager, he indicated that they will be trying Aqua Health Products this year. Mr. Hugh Mitchell, indicated that if Aqua Health is chosen, they could be buying as many as 200 litres of their product annually, at a rough price of $1000/litre.

The major competitor to Aqua Health is Bio Med located in Washington state. However, this company apparently does not have the experience in Atlantic salmon that Aqua Health does. Potential customers we spoke with also indicated that the company is currently overcoming regulatory barriers and has not done very aggressively marketing to the northeastern United States. In fact, to their knowledge the company does not have a sales representative servicing the area.

All persons contacted believe the market for fish vaccines will be growing as fish farmers are becoming increasingly aware of the benefits of buying vaccinate fish. The reason for this is that by vaccinating fish at an early age the percentage of requiring medical treatment

for diseases incurred later in life is greatly reduced. This leads to a consumer concern in terms of the chemicals still within the fish when they are resold. At this point in time, it appears competition is not a major factor inhibiting market growth, but rather the need to educate fish growers as to the benefits of purchasing vaccinated fish stocks.

Currently, Aqua Health is running at full production. However, plans are already underway to enlarge their production facilities. Aqua Health has indicated that limited production capabilities will not be a problem in the foreseeable future.

4.0 SERVICES SECTOR

4.1 Supply Analysis

The emphasis in this sector is on products (services) which can be broadly marketed as a result of computer technology. PEI probably has sufficient front line competence, including at the UPEI Computer Centre and at Holland College, that it should be able to attract service industries here whose products rely on software carriers.

The opportunities in this field are limited primarily by the range of visioh, rather than by reason of the traditional barriers: distance, transportation costs, energy costs, and the like. For these reasons we do not consider that there is substantial potential in the services sector at this time.

4.2 Implications of Free Trade

There are no trade barriers to trade in computer services and software. Because of the relatively open North American market for computer services, the effect of the FTA on the industry will be minimal.

The FTA improves access for Canadian and American business travellers to the other's market. Canadians have freer access to enter the United States to temporarily perform research, design, production, marketing and other services.

4.3 Market Potential

The market for computer software technology has been examined in the context of computer-assisted training in section 6.3 of this report.

5.0 HEALTH CARE SYSTEMS SECTOR

5.1 Supply Analysis

Biotechnology was initially perceived in relation to the development of products and processes for the health care industry, where it enables products to be developed which would be prohibitively expensive using conventional processes.

A number of animal health products and processes have developed through biotechnology, such as vaccines, and diagnostic and other treatment materials. Here again it is expected that the presence of AVC will enable the province to expand its capacity in the health care field.

In addition, two health care industries have been established in relation to human health. These include:

- Advanced Medical Technologies, which has developed a needleless insulin injection syringe for diabetics

- Diagnostic Chemicals, which produces diagnostic kits for a range of purposes, and also protein catalysts, used for diagnostic purposes

The best opportunities in this field may be in the Canadian rather than the USA market, in that Canada is estimated to be importing more than 80% of its health-care system needs, much of which could be manufactured in this country.

New work specific to plant, animal, and fish health can now be undertaken on PEI, with the Atlantic Veterinary College and the new Federal DOA Pathology Laboratory bringing a new dimension to the health care field. The AVC is unique among the four colleges in

Canada in that it has a Fish Health Centre, which has been a scientific resource to the fish vaccine plant at WRIP.

Based on the supply analysis, the following health care systems were identified by the consultants for priority attention in Phase I:

- needleless injection syringe; and
- diagnostic kits.

5.2 Implications of Free Trade

Needleless insulin injection syringes face a 8.4% tariff in the United States. Diagnostic kits are not subject to tariffs on either side of the boarder. The reduction of the tariff on the syringe in ten years is expected to make this product more competitive in the U.S. market.

5.3 Market Potential

Needleless Injection Syringe

Advanced Medical Technologies (AMT) located in the West Royalty Industrial Park, specializes in the production of a needlessness insulin injection device called "Preci-Jet," and a precision, high tolerance machine tooling for the Aerospace industry. The company is in the process of being purchased by Health More Inc. (HMI) of Toronto and is currently under a management contract with them.

The Preci-Jet is targeted to diabetics requiring insulin injection on a daily and bi-daily basis. There are three heavy user types in this segment:

- individuals who are first diagnosed with diabetes;
- diabetics falling in the high income bracket; and
- the parents of small children with diabetes.

The reason for Advanced Medical Technologies' work in two distinct industries, stems from the need for fine-tuned, high quality products in both the medical industry and the aerospace industry. Historically, the sale of the Preci-Jets have been sporadic, whereas the aerospace contract work has been steadily increasing in demand.

There is currently limited direct competition to the Preci-Jet product in North America. One company in the States (name unknown) provides a similar product to the Preci-Jet, but has recently gone out of business due to low quality standards and subsequent poor customer satisfaction. During the initial United States product launch, AMT was selling an estimated 200 Preci-Jets per month while its competitor was selling 800 per month AMT, at this point in time, appears to enjoy a technological edge in its production for this product.

A future market opportunity being examined by Advanced Medical Technologies concerns the Preci-Jet's use for giving injections to temporarily cure impotency. A study is currently underway in France to determine the market potential for this application, which is substantially larger than the existing diabetic market.

AMT does not believe Free Trade will have any major impact in marketing their products and services to the United States. In terms of the company's aerospace work, little concern has been given to this topic due to the large market demand for their services in Canada.

Diagnostic Kits

For the purpose of this study, the consultants did not undertake market demand interviews for Diagnostic Chemicals. The reason for this is that the owner of the company, "could teach a course" on the marketing of Diagnostic Kits to New England. He has been

persistent in his marketing efforts to the United States, establishing credibility for his company, promoting the benefits of his products and working toward overcoming customer objections about buying from a small, relatively unknown, Canadian Company.

Generally speaking, the market for Diagnostic Kits in the United States is enormous. Every hospital, medical clinic are medical research facility represents a potential customer for this product. The major factor limiting market penetration for Diagnostic Chemicals is not a lack of market research, but the financial resources required to enable the company to compete against the industry giants in the U.S. medical field.

6.0 EDUCATIONAL TECHNOLOGY SECTOR

6.1 Supply Analysis

Holland College (HC) has been one of the leaders in development of competency-based education in North America. For a number of years representatives from American technical colleges have been coming to PEI to study the HC system. This system was adopted by colleges in Maryland and Ohio, both of which are now widely recognized in the USA for the quality of their skills training programs.

Holland College has not undertaken marketing in the USA because it has not been resourced for that purpose. Last year a new Development and Extension Services Directorate was created as a self-funding agency of the College. The Division must market to stay alive, and is currently marketing in the Third World, where its techniques are meeting with considerable enthusiasm for skills training purposes.

The Director believes that HC could expand its market in the USA, not only because of the uniqueness of the approach to technical training but also because American schools cannot develop the program themselves as a result of inflexibility and resistance within the educational establishment to the competency-based approach.

There may also be particular opportunities now within international labour unions, which recognize the need for skills-related worker upgrading, and for new training systems to achieve as much. Unions recognize that they have to find some practical alternative to costly formal training programs if they are going to secure employer acceptance of retraining proposals in collective bargaining. The International Bricklayers Union has established a Bricklayers School in Summerside, using HC assistance and methods, one of only three such schools in North America. Other international unions having Canadian affiliates may also be interested in establishing similar schools to protect the employability of their members, and could possibly be encouraged to locate on PEI.

Up to the present time HC has not been thinking of expanding its USA market, but as a self-funding agency within the HC umbrella, the new Directorate is prepared to consider expansion wherever a market exists. What has made the Third World market attractive has been CIDA assistance, which has covered a great deal of project funding.

There may also be opportunities for Holland College in the development of computer assisted training programs, especially in view of its competency-based training. The trick will be to establish a market for its products.

Based on the supply analysis, the following education technology were identified by the consultants for priority attention in Phase I:

- competency based education; and
- computer-assisted training.

6.2 Implications of Free Trade

There are no tariffs on the provision of commercial education and training services either in Canada or the United States. Under the FTA there is a provision to facilitate temporary movement of service providers between the two countries. Where there is trade in the commercial education and training services, the FTA will permit such trade to flow more freely.

6.3 Market Potential

Competency Based Education/Computer-Assisted Training

Holland College provides educational services to any organization or institution wishing to teach or up-grade specific skill areas. Dundalk College, located in Baltimore, was jointly involved with Holland College in establishing their curriculum based on the "Dacum chart",

a modular system used to breakdown a vocation into discrete skill components, and test the students' competency in performing each component. Dundalk Community College has since become very aggressive in marketing this teaching technology to various educational, business, and labour organizations in Maryland and surrounding states. As such, it would be a competitor to Holland College if the PEI institution marketed consulting services based on this system in the U.S.. Dundalk College has established a Dacum Resource Centre, which is funded by a state grant with the objective to be training facilitator to a number of Maryland community colleges. However, the college has now added an external division which is aggressively marketing to customers outside Maryland. To date, with limited marketing efforts, the college has sold their services to clients in ten different states. On the following page appears a list of past clients of the Resource Centre. The Dacum Research Centre has been in operation for five years has recently become "externally oriented" with plans to pursue additional market opportunities.

The market for Holland College's educational and curriculum development services looks very good. The organization to date has sold their services to third world markets primarily due to available CIDA assistance. The College is made aware of potential project in these countries through various associations such as The Association of Community Colleges of Canada and through applicable CIDA divisions.

While the first logical step would be for Holland College to aggressively pursue market opportunities in Canada, there is excellent opportunity in the United States. The table below shows the number of public and private community colleges and vocational schools in the New England area, all of which represent potential markets for Holland College's services.

EXHIBIT 6.1: NEW ENGLAND COLLEGES AND VOCATION SCHOOLS

School	Connecticut	Maine	Mass.	New Hampshire	Rhode Island	Vermont
Public Commty. Colleges	17	5	17	8	1	2
Private Commty. Colleges	4	5	17	4	0	3
Vocational Schools	144	32	223	35	34	13

SOURCE: NEW ENGLAND BOARD OF EDUCATION

The manpower required to perform external consulting services depends on the number of programs being developed as well as the number of students in each program. Holland College currently has 20 people capable of providing consulting services if required. For example, in Belize, Central America, Holland College currently has two people working on a term assignment to assist the local educational facility in setting up a hospitality kitchen for educational purposes.

The presence of prospective free trade with the United States has not been an issue explored by Holland College, as present no work in being done in the area.

Other than the work being performed by Dundalk College in Maryland, Ohio University in Columbus, Ohio has established an independent centre, called the National Centre for Education and Training for Employment. We understand that this organization is very aggressive pursuing market opportunities for their services as well.

7.0 IMPLICATIONS FOR PHASE II

The purpose of Phase I - **Opportunity Identification** was to use an inventory of PEI capabilities, interviews with PEI industry representatives, market interviews and an assessment of the Free Trade Agreement to develop a "long list" of ten potential export market opportunities. Phase II - **Opportunity Assessment** - will conduct preliminary market assessments and use a product/market matching technique to develop a "short list" of five export opportunities.

7.1 Criteria

The following criteria were used by the consultants to evaluate which of the export market opportunities analyzed in this report should proceed to Phase II:

Supply - Side Criteria

1. Economic significance to the Island in terms of employment and income creation.

2. The degree to which the opportunity represents a commercially - marketable product or service, not simply a concept or idea.

3. The degree to which PEI either has now, or could create without substantial government funding, the capacity to meet export market needs.

4. The likelihood that the private sector will participate in export marketing, should the opportunity appear worthwhile.

5. The extent to which PEI can fill a unique, quality niche.

6. The degree to which U.S. export strategies have already been developed by PEI suppliers, therefore not requiring further study now.

Demand - Side Criteria

1. The extent to which the opportunity is positively affected by the Free Trade Agreement.

2. The extent to which Canadian suppliers in general, and PEI suppliers in particular, have some U.S. market exposure and/or preference now (i.e. not starting completely from scratch).

3. The number and extent of non-tariff barriers to be overcome by PEI suppliers (i.e. U.S. regulations, market access, transportation costs, economies of scale, etc.).

4. The size of the Northeastern U.S. market in that product or service area.

5. The growth prospects for the Northeastern U.S. market in that product or service area.

6. The degree of competition anticipated in this product or service area.

7.2 Recommendations

Based on the analysis contained in this report, and a review of the above criteria, it is recommended that the following nine export market opportunities be the subject of our work in Phase II:

- Cultured Mussels;
- Processed Lobster;

- Value-added Potato Products;
- Cole Crops;
- Bottled Spring Water;
- Competency-based Education/Computer-assisted Training;
- Disease Free Strawberry Plants;
- Vaccines for the Prevention of Fish Diseases; and
- Needleless Injection Syringe.

Once approval is received to study the northeastern U.S. market potential for these export opportunities, then the Phase II work can begin right away.

APPENDIX B

PHASE II REPORT

PHASE II REPORT
PEI FREE TRADE
MARKET OPPORTUNITIES STUDY

March 1990

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1.0 INTRODUCTION

This report presents a summary of the analysis conducted during Phase II of a three-phase study of the Northeastern United States export opportunities for P.E.I. firms, in light of the Free Trade Agreement. It was produced by The DPA Group Inc., Halifax, in association with Smith Green & Associates, Charlottetown, and Enterprise Management Consultants, Charlottetown.

The report presents Northeastern U.S. market assessments for six food products and three non-food products. The material is intended to inform and motivate P.E.I. producers concerning the export potential of their products. Where possible, specific market penetration strategies are identified; indepth market assessment and strategies will be developed for five of the opportunities. Recommendations concerning which product opportunities should proceed to Phase III are presented at the end of this report.

2.0 FOOD PRODUCTS

2.1 Overview

This study focuses on the New England and Mid Atlantic States as the prime geographical target market. The Northeast region is defined as including the following States:

New England	Mid Atlantic
Maine	New York
New Hampshire	New Jersey
Vermont	Pennsylvania
Massachusetts	
Rhode Island	
Connecticut	

Projected 1990 population for the Northeast region is 50.57 million people; 66% of this population is 25 years or older. This older segment is the prime target market for consumption of value added premium food products.

Families in the Northeast region spent 27% more ($2.28 per week) in 1986 than the U.S. national average for weekly expenditures on fish, seafood (and eggs). Total weekly expenditure for food at home was $41.55. Fresh fruits and vegetable expenditure was $4.39, while frozen fruit and vegetable expenditure was $2.71 per week.

Families in the Northeast had the highest weekly expenditure on food away from home of the major regions of the United States. In 1986, the average family in the Northeast spent $24.20 on food away from home.

The Northeast States represent an ideal market for developing the sales of P.E.I. food products. Factors such as geographical access, population density and eating habits all

favour the following market opportunities: cultured mussels, lobster, rock crab, potatoes, cole crops and bottled water.

2.2 Fish Products - General

General market trends with a positive influence on the demand for seafood include: an increase in meals eaten outside the home, greater use of microwave ovens, increased demand for frozen prepared dinners, and increasing per capita consumption of fish products.

Per capita annual consumption of fish and shellfish by Americans increased 30% between 1970 and 1987 to 15.4 lbs. Frozen and fresh forms of fish and shellfish have driven this growth, increasing 45% during the same period to 10 lbs per year.

Canada is the largest fish and fish product exporter to the U.S. The most significant entry points for Canadian fish to the U.S. are Boston and New York. During recent years, the U.S. dollar has been significantly devalued against all major western currencies other than the Canadian dollar. This situation has led to enhanced relative value for Canadian exports.

U.S. fish product distributors prefer (in order of importance) the following methods of learning about new suppliers: personal contact initiated by the supplying firm, brochures, recommendations from personal contacts, trade fairs, and articles or industry advertising. Most buyers prefer to source from U.S. companies, thus Canadian suppliers must have favourable price, quality, consistency of supply and accurate weights. Some markets have developed different preferences for the degree and type of processing for seafood products. Where differences exist, suppliers must identify and tailor their approach to these markets. Where competitors have the ability to provide year round supply, P.E.I. companies must develop the technology to provide year round supply as well.

The most prominent annual trade show in the region is the Boston Seafood Show. Prominent industry publications are: Seafood Leader, Seafood Business Report and Frozen Food Age.

It is recommended that small to medium sized P.E.I. seafood suppliers market their products through U.S. distributors rather than attempt to sell direct to retail stores. Developing a branded retail product in the Northeastern U.S. is a very expensive proposition. Grocery shelf space for branded frozen fish requires listing and promotional fees be paid to each chain that carries the item, absolutely consistent supply year round, and regular head office sales support. Limited retail opportunities may be available through strong distributors and brokers, however a small to medium sized P.E.I. supplier would not be recommended to make direct retail branded marketing a prime focus.

Value added food service niches would appear to be the largest and simplest target market to approach. Promotional spending is straight forward and limited to literature and some sample allowances. Restaurant goers are often more adventurous than retail shoppers and are more willing to make a impulse or planned purchase on a premium shellfish product. Packaging is simpler than with retail products and usually involve larger, more efficient sizes.

Environmental concerns may lead to positive market developments for the Canadian shellfish industry. Coastal pollution along the Eastern U.S. may affect shellfish production or reduce market demand for American coastal production because of safety concerns. P.E.I. shellfish suppliers would have both a real and perceived comparative advantage.

Detailed marketing strategies for five product/market opportunities will be the subject of Phase III. Based on the work conducted in Phase II, following is a summary of the critical success factors for P.E.I. suppliers in the U.S. seafood market.

2.3 Mussels

2.3.1 Overview

P.E.I.'s cultured mussel industry is in a strong growth stage. Demand in existing markets currently outstrip supply. Maximum potential production capacity for the Island is not known with certainty, but clearly has not been reached. Mussel culturing is also active in New Brunswick, Nova Scotia and the Eastern Seaboard.

It is foreseeable that within the coming years the North American market for cultured mussels will reach an equilibrium of supply and demand. P.E.I. producers are currently selling live mussels in Atlantic Canada, Quebec, Ontario, and British Columbia. Major markets in the Northeast States are virtually overlooked, yet American suppliers have significant penetration in the prime Canadian markets. The implication is that P.E.I. growers should be competing in the major U.S. markets.

P.E.I. cultured mussels have significant advantages over wild mussels or the type of cultivated mussel predominantly produced in the U.S. Compared to the wild product, cultured mussels in general have approximately twice the meat yield, have thinner shells that weigh less, and have no "pearls" which means less damage to the meat. These advantages can be used to gain premium pricing over wild mussels and greater suitability for value added processing. Higher meat yields mean more productive shucking; larger, pearl free mussels are more desirable as a prepared item for the retail, food service and industrial ingredient supply market segments. Mussels are transported by truck to markets within 1000 km, and by air beyond that range. There is no duty on cultured mussels.

2.3.2 United States Mussel Market

U.S. 1987 mussel production was approximately 34 million lbs., mostly in New England. Growth in landings since then is estimated to be 15% with 1990 production projected to be 50 million lbs.

Their are at least 20 major mussel producers on the eastern seaboard. Four of the largest are: Great Eastern Mussel Farms Inc., Maine; Blue Gold Seafarms Ltd., Rhode Island; Abandoned Farm Inc., Maine; and Penn Cove Mussels Inc., Washington. U.S. producers provide low to mid quality products with an average meat yield of 25% vs. Canadian mussels typically yielding 35% to 40%.

Food service sales account for 80% of demand, retail for 20%. Major buyers are seeking consistent year-round delivery with shipments on a daily or weekly basis. Canadian suppliers may require up to a 10 to 15 cents/pound discount vs. U.S. suppliers.

New York is the largest single market for mussels in North America at approx. 6 million lbs. per year. There are 35 wholesalers and distributors handling mussels. In New York, food service sales represent about 85% of the business while retail sales account for 15%. Distributors based in New York City sell throughout the state of New York, as well as New Jersey and Pennsylvania.

The primary U.S. suppliers to New York are Great Eastern Mussel Farms, Blue Gold Sea Farms, and Cape Cod Mussels. Most mussels go through the Fulto Fish Market and are then trucked to distributors and retailers. Canadian mussels have a good reputation and are estimated to have a market share of 5% in New York.

2.3.3 Mussel Product Opportunities

A summary of the P.E.I. opportunities for marketing mussels in the Northeast U.S. appears below:

- premium quality branded products for retail;
- frozen mussels in both retail and institutional packs;
- contract supply of shucked frozen mussels to manufacturers of microwave dinners;

- frozen mussels that are breaded, spiced, in half shell, marinated, prepared for deep frying, or stuffed
- shucked mussels packed in natural juices sold in gallon jars; and
- frozen meat packs at 10 LBS for food service and 2 LBS for retail.

2.4 Lobsters

2.4.1 P.E.I. Lobster Supply and Potential

1988 lobster landings in P.E.I. represented approximately 16.4 million lbs or 33% of Canadian landings. Canada supplies 99% of all lobster imported in the U.S.

In 1988, U.S. imports of Canadian lobster were 28.25 million lbs. of live product, .54 million lbs. canned (hot and cold pack) and 7.8 million lbs. in other forms (mainly frozen in shell). The value of these exports to the U.S. were CAN $145,513,000 for live exports and CAN $42,433,000 for frozen.

Live product and lobster frozen in the shell constitutes the vast majority of Canada's lobster exports. Very little other value added production appears to be done. Perhaps this can partly be explained by the high cost of the raw material, and the fact that lobster in the shell is highly presentable.

Canadian lobster suppliers have had two significant financial setbacks recently. A strong Canadian dollar relative to the U.S. dollar has lowered export revenues. As well, high interest rates have increased the cost of holding domestic inventories.

2.4.2 The Northeast Lobster Market

The total market for Lobster in the Northeast States is not known with certainty. This region is the dominant market for lobster consumption and the total value of the domestic catch and all Canadian imports is worth approximately U.S.$300 million.

The total American lobster catch has been stable between 1984 and 1987 at approximately 45 million lbs., for a 1987 value of $133,554,000.

The "popsicle pack" frozen lobster market in the United States was around 3 million lbs. in 1989. Popsicle packs currently represent less than 10% of Canadian lobster exports.

The U.S. carapace increase schedule will interfere with the markets and processing of Canadian lobster. As the Canadian size becomes too small for the American regulations, promotion of popsicle pack and other forms of lobster would have to increasingly replace the existing sales of live lobster to the U.S.

2.4.3 Lobster Product Opportunities

Regardless of the traditional reliance on live lobster sales, opportunities for value added processing exist and should be exploited.

Frozen lobster meat is superior to heat processed. Value added product opportunities include:

- vacuum packed meat frozen for retail sales, institutional or industrial soup, sauce and frozen dinner preparation;
- seafood chowder packs incorporating other shell and groundfish; and
- stir fry packs for retail deli counters.

2.5 Rock Crab

2.5.1 P.E.I. Rock Crab Production and Potential

1987 P.E.I. rock crab landings of 967,063 lbs represent approximately 125,000 lbs. of meat with a potential market value of $900,000 to $1 million. Most rock crab landings appear to have been absorbed domestically.

Rock crab has not developed a distinct market identity. Its market price has fluctuated with the price of more established crab species such as snow and blue crab. If, for example, snow crab stocks are insufficient to meet demand then snow crab prices go up and other less expensive crab, such as rock crab, can attract some price sensitive crab purchasers.

A principle handicap to developing a market for rock crab is its low meat yield. The landed weight of a rock crab will yield between 10 to 14% meat. This meat must be hand shucked because of the rock crab's small dimensions. Consumers who buy rock crab in the shell are faced with a lot of work to get a relatively modest amount of meat. Once extracted however, the meat of rock crab is highly palatable, is not stringy like king or snow crab, and can be compared to lobster claw meat.

Recently, prices for all crab products have been depressed because of high inventories that have resulted from strong North American production and reduced exports to Japan last year. Because of the high cost of the manual extraction of rock crab meat, processors are limited by a breakeven selling price higher than that of other crab products. When other, more established crab meats are selling below the rock crab break even price, then rock crab sales halt altogether.

Bell River Enterprises is P.E.I.'s only current processor of rock crab. Bell River sells both minced and frozen meat chunks, the later in both 1 lb and 5 lb vacuum packs. The

company has no previous experience selling in the U.S., however will be attending this year's Boston Seafood Show.

2.5.2 The Potential Northeast Market

No U.S. shellfish distributors were identified that specify rock crab as listed item. Snow and King crab are the dominant imports and Blue crab is the dominant domestic catch.

The 1987 New England crab catch was 6 million lbs., Chesapeake Bay catch was 76 million lbs., the South Atlantic catch was 47 million lbs., the Gulf States catch was 71 million lbs., and in the Pacific States 174 million lbs of crab was caught.

The total American crab catch has grown 23% from 1984 to 1987 to 386,368,000 lbs. Of note, the value of the catch has grown 73% during the same period to $321,875,000.

2.5.3 Rock Crab Market Opportunities

The prime challenge for existing and potential P.E.I. producers will be to develop a distinct market identity for rock crab as a high quality, moderately expensive crab meat. The appeal for rock crab has the potential to expand beyond traditional crab consumers and attract those who do not prefer the texture of snow crab. This potential market is large as it includes all those consumers who enjoy lobster. Once a distinct market demand is established for the basic item, then value added production, beyond merely extracting the meat, can be explored.

Discussions with at least one seafood distributor leads us to believe that rock crab may find a viable market in the U.S. One worthwhile strategy for P.E.I. suppliers is to identify and work with those U.S. seafood distributors that have a history of aggressively developing new products, as opposed to those that simply "buy what my customers are asking for".

2.6 Potatoes

2.6.1 The Export Markets for Potatoes

American per capita annual consumption of white potatoes decreased by 9.2% between 1970 and 1987. This decline has been fueled by a 30% decline in fresh potato consumption to 42.3 lbs. and is only partly offset by the increase in frozen potato consumption from 12.2 to 22.5 lbs per year over that time period.

Total U.S. production of potatoes in 1987 was 1,929,000 short tons, concentrated mainly in Idaho, Washington, and California. The wholesale value of the crop was $1,702,000,000.

Exports of Canadian potato products to the U.S. to November 1989 were as follows:

Seed Potatoes	CAN $21.1 million	83,289 tons
Fresh	58.85	194,216 tons
Flakes	1.3	959,911 kg
Starch	0.58	1,202,579 kg

Frozen, dried, and potato flour exports did not specify U.S. purchases and can be concluded as beingn insignificant.

2.6.2 Potato Market Opportunities

Major potato multinationals will subcontract processing of niche items that their plants are not optimized to handle. Specific value-added or differentiated product opportunities are: Stew packs, stir fry packs, small restraunt sized potatoes in institutional packages, small microwave packs, potato skins, prepeeled potatoes, precooked frozen.

There are very large and efficient companies involved in processing potatoes. McCain, Carnation, Orieda, and Cavendish Farms can be both major customers and major

competitors for small firms trying to establish themselves as potato processors. Companies that respond to small market niches that the majors cannot effeciently address, and do not compete directly with industry giants will find they can peacefully coexist. Private label production and subcontracting for the majors may be feasible. Year round supply is important when dealing with major customers and value added product.

There also appears to be an opportunity to increase sales of fresh tablestock potatoes in the New England market.

2.7 Cole Crops: Broccoli, Cauliflower, Brussel Sprouts and Endive

Reference information on these particular crops was scarce. P.E.I. farmers have virtually no experience selling these crops to the U.S. Indeed, few P.E.I. farms currently specialize in these crops.

2.7.1 Broccoli

During 1987, 571,600 short tons of broccoli was produced in the U.S. at a wholesale value of $238,800,000. The major producing States are California, Texas, and Arizona.

The tarrif on Canadian broccoli is currently at 20% and it is estimated that selling to the U.S. market will not be cost effective until the tarrifs are at 10% (1994) or less. Quebec and Ontario remain the prime markets for P.E.I. broccoli.

Cleaned and portioned broccoli ready to use either raw or in stir fry packs represent two U.S. value added opportunities for local producers.

2.7.2 Cauliflower

During 1987, 367,000 short tons of American cauliflower was produced at for a value of $187,600,000. California, Arizona and New York produce the largest cauliflower crops.

In 1987, Statistics Canada identified only 15 acres in P.E.I. dedicated to cauliflower production. Total Canadian exports of cauliflower to all countries to November 1989 were valued at $39,000.

Cauliflower portioned and prepared for stir fry packs, etc. represent a low capital value added opportunity.

2.7.3 Brussel Sprouts

P.E.I. has a few brussel sprout farmers who grow under contract for McCains.

Total Canadian exports of brussel sprouts in to November 1989 were valued at $23,000 to all countries.

2.7.4 Endive

Canadian production and export information on endive was not obtained.

2.7.5 Other Vegetable Crops

The following highlight some vegetable crops with significant exports to the U.S. (figures to November 1989) some of which may offer PEI producers more export potential than cole crops do.

Crop	Quantity	Value
Tomatoes	935,615 kg	CAN $1.10 million
Cabbages	11,493,572	2.69
Carrots and Turnips	5,931,453	2.36
Mushrooms	1,157,832	2.85
Frozen Peas	6,299,808	7.81
Frozen Beans	3,792,104	5.35

Sweet Corn	12,468,146	15.04
Frozen Mixed Veg.	2,733,952	2.21
Peas dried, shelled, skinned, or split	32,274,536	11.22

2.7.6 Organic Farming

Virtually all consumers are interested and would ultimately wish to have their foods additive free and produced in an environmentally benign manner. Unfortunately, particularly with respect to agricultural products grown in humid environments, organic farming methodology is unable to provide the product quality (size, colour, taste) and shelf life that is acceptable to the vast majority of North American consumers. The market for organic produce is estimated at just 0.5% of the total market and has not been growing recently.

2.8 Bottled Water

2.8.1 Northeast U.S. Markets

The North American market for bottled water was estimated to be $1.7 billion in 1987, 95% of the North American demand is in the U.S. Market, which is expected to grow at 20% per year for the next five to eight years. The current U.S. product mix breakdown is: 36% sparkling; 38% non-sparkling delivered; and 26% non-sparkling retail.

The Northeast region of the U.S. consumed approximately 200 million gallons of bottled water in 1986 at an average per capita consumption of four gallons. Per capita consumption in 1990 is expected to be between six and eight gallons in this market.

There are currently 450 bottlers supplying the U.S., 80% of which are smaller than $10 million in sales, with the top two bottlers representing 30% of the total U.S. supply.

Prime U.S. markets are characterized by a large population base in a small geographical area, coupled with concerns over quality and/or quantity of local drinking water.

2.8.2 P.E.I. Constraints

Non-sparkling water is commonly sold in Canada in 1 L and 4 L retail sizes in grocery stores and 18 L bottles are delivered to residential and commercial cooler accounts. These delivery accounts are the most profitable market for bottled water companies. Their greatest margins come from the rental of the coolers.

Distribution costs have restricted most non-sparkling bottled water brands to a limited trading area. "Manufactured" water, i.e. bottled water not supplied from a single well source, is a new product that threatens to harm smaller, independent bottlers. Manufactured water technology will likely clear the way for major national and international brands that will have controlled tolerances and superior taste characteristics at a moderate price. When and if national and international companies can establish a network of water "manufacturing plants" through the continent, then their transportation costs will be significantly reduced, putting price/cost pressure on the independents.

Sparkling waters require significant advertising support, both to develop brand image and to stimulate purchase. It is estimated that the advertising expenditures by major brands totals between $15 to $20 million in the U.S. A Nova Scotian company introduced "Eau Canada Spuroal" bottled water to the Northeastern U.S. with a $3.5 million annual advertising budget. The company opened in November, 1987 and ceased operations in either late 1988 or early 1989. Montreal-based Source Montclair Labrador Ltd. spent $3 million in 1979 and 1980 trying to develop markets for its water in New York and Florida. Volumes were good, however, not profitable enough in Florida. The company continues to sell modestly in New York.

Capital cost are significant for an efficient, controlled quality bottling plant. The Sparcal plant in Nova Scotia cost $8 million, while Nora Beverages in Quebec spent $15 million for their fully automated asceptic bottling plant.

2.8.3 P.E.I. Opportunities

Canadian Pure Water Ltd. of P.E.I. is test shipping a quantity of "Anne of the Island Pure Natural Spring Water" to Japan in an effort to capitalize on the Japanese fascination with Anne of Green Gables.

While U.S. consumers may be curious about the Anne of Green Gables image, they do not share the fascination about the character that Japanese consumers have.

On the positive side, over 85% of imported bottled water in the U.S. comes from France and Italy, two countries that have successfully overcome large shipping distance obstacles.

3.0 NON-FOOD PRODUCTS

3.1 Introduction

In this section of the report the U.S. export potential of the following three areas are examined:

- Aquaculture/Aqua Health Products and Services;
- Stem Culture Technology; and
- Competency-Based Education/Computer Assisted Training.

3.2 Aquaculture/Aqua Health Products and Services

The Phase I report presented an assessment of the U.S. market for vaccines for the prevention of fish diseases. As a result of the Phase I meeting, it was decided that the product area should be broadened to include "Aquaculture/Aqua Health" products and services. During Phase II, a number of additional such products in the Aquaculture/Aqua Health area were examined.

Prince Edward Island has a substantial base of aquaculture products and services with export potential. In addition to a fish vaccine produced by Aqua Health, the Atlantic Veterinary College (AVC) offers a wide range of diagnostic services to fish farms, fish hatcheries, fish feed companies and veterinary pharmaceutical companies. Integrated Aquatic Systems sells leading edge technology for water quality circulation in land-based fish farms and hatcheries, while various Island metal manufacturing and machining companies such as Charlottetown Metal Products manufacture a full range of mussel culturing equipment.

A number of P.E.I. companies have experience marketing their products and services to Norway, Chili, and British Columbia, where aquaculture activity is well established.

However, future market potential also exists in the United States, particularly in Maine where aquaculture is currently in its infancy.

In addition to aquaculture supplies and related services, excellent potential may exist to export the actual fish stock. Potential fin fish sales to Nova Scotia, New Brunswick hold promise, however, various contacts indicate that Maine may hold promise as a new market area.

The work being performed by the AVC in the area of diagnostic services to the aquaculture industry has given P.E.I. a credible reputation in the New England area. According to a company representative at Ocean Products Limited, one of the largest fish hatcheries in Maine, they have used services provided by the AVC and are very impressed with their capabilities. These hatcheries view AVC as an extension of their in-house veterinary services. Performing diagnostic research beyond the on-site level requires heavy expenditures on capital equipment, which most operations cannot avoid.

The Marine Resources Division of the Maine Department of Inshore Fisheries and Wildlife reports that they have recently become very active in developing the aquaculture industry in the State. A campaign is currently underway to better educate the industry about aquaculture operations. As mentioned in the Phase I report, in Maine, there are roughly four to six major fish hatcheries, 15 to 20 sea cage operations, 15 commercial mussel growers as well as smaller inland fish hatcheries growing sport fish such as rainbow and brook trout and salmon. The future of the aquaculture industry in Maine is very promising due to their access to large markets in Boston and New York and because of the natural water qualities of the region.

In terms of the market for water recycling and circulation technology, sources indicate that the underdeveloped state of inland hatcheries and growers in the New England area represents good growth potential for P.E.I. firms.

With regard to the potential for P.E.I. specialty machine shops to sell their technology and services to New England mussel growers, the president of the Maine Aquaculture Association indicated that mussel growing operations in Maine (the bulk of New England mussel growing takes place in Maine) have not been as successful as previously anticipated. The potential for exporting equipment to the mussel growing operations may, however, hold promise in the not too distant future.

3.3 Stem Culture Technology

3.3.2 Cloned Blueberry Plantlets

The Phase I report presented an assessment of the U.S. market for disease free strawberry plants. As a result of the Phase I meeting, it was decided that the product area should be broadened to "Stem Culture Technology" by adding cloned blueberry plantlets. This latter product was the subject of the Phase II market research.

Work is being undertaken by Phyto Cultures Limited and Lady Slipper Growers, in conjunction with the Food Technology Centre, to develop cloned blueberry plantlets from tissue culture. The project is in the experimental stage with the mandate being to produce 100,000 blueberry plantlets for Island growers. Don Northcott, who is heading the project, is currently experimenting with seven different varieties of blueberry plants. If successful, the development of hardy blueberry plantlets could play a major role in increasing blueberry yield per acre to growers located in Prince Edward Island, Nova Scotia, New Brunswick, and the Northeastern U.S.

To understand the benefits commercially available blueberry plantlets can provide to these operations, it is first necessary to develop a general understanding of the blueberry growing operation. Blueberry operators for the most part establish their crops in fields where wild blueberries are abundant. These fields are then cultivated and harvested, and, over the course of 20 to 30 years, may develop up to the point where 75% of the land is capable of yielding blueberries. A number of blank or barren patches usually remain within the

blueberry fields as a result of slow pollination. If cloned blueberry plants were available, then varieties of berries with desired qualities could be used to "in-fill". These plantlets could be bearing fruit within two to three years, versus between 10 to 20 years required for wild berries to cross pollinate and completely in-fill.

Blueberry plantlets could be used to plant an entire field, should growers wish to expand their operations. However, at the current cost of plantlets this strategy is cost prohibitive. Given that roughly 4,000 blueberry plantlets are required to fill an acre, planting a new field would be an expensive undertaking for a blueberry operator. The work being done by the Food Technology Centre suggests that each blueberry plantlet would cost in the area of $0.25. However, as technology and economies of scale advance, this price is expected to decrease.

While the ability to develop the technology to the point where mass volumes can be produced is still a major question, the potential market for the product could be large. Of the 94 million lbs of blueberries produced in North America in 1989, roughly half of these came from the State of Maine and the remaining 35-40% from Atlantic Canada. Mr. George Wood, Executive Director of the Wild Blueberry Association of North America, located in Fredericton, indicates that a number of requests have been received from Maine and from countries around the world for blueberry plant materials.

The degree to which Atlantic Canadian blueberry plant suppliers would wish to sell their plants, which may assist in developing blueberry industries in other parts of the world becomes an important issue. However, from the point of view of a Prince Edward Island blueberry plant supplier, it is quite possible that "if they don't sell to this market, then someone else will". There are no duties imposed on blueberry plants entering the United States, although there are regulations regarding sanitary requirements which must be met.

In addition to selling blueberry plantlets to commercial growers, another market opportunity may exist in the nursery business where blueberry plants would be re-sold as

ornamental plants. This is an especially attractive opportunity, considering blueberry plants thrive in almost any type of soil, maintain a very attractive appearance, and are very hardy.

In summary, the major reason for this product not being successfully marketed in the past was due to the lack of technology available to produce top quality blueberry plantlets. Officials we spoke with associated with the project on Prince Edward Island indicate that this situation may soon change.

3.3 Competency Based Education/Computer-Assisted Training

The Phase I analysis of this product are was intended to provide sufficient detail that it could be evaluated against the other opportunities studied in Phase II. To allow comparison, the Phase I text concerning the market analysis of competency based education/computer-assisted training is presented below.

Holland College provides educational services to any organization or institution wishing to teach or up-grade specific skill areas. Holland College offers competency based education utilizing a special rating system for students' performance of a particular skill both before and after training. Also, part-in-parcel with the educational program is computer assisted training utilizing software technology specifically developed for each trade skill.

Dundalk College, located in Baltimore, was jointly involved with Holland College in establishing their curriculum based on the "Dacum chart", a modular system used to breakdown a vocation into discrete skill components, and test the students' competency in performing each component. Dundalk Community College has since become very aggressive in marketing this teaching technology to various educational, business, and labour organizations in Maryland and surrounding states. As such, it would be a competitor to Holland College if the P.E.I. institution marketed consulting services based on this system in the U.S. Dundalk College has established a Dacum Resource Centre, which is funded by a state grant with the objective to be training facilitator to a number

of Maryland community colleges. However, the college has now added an external division which is aggressively marketing to customers outside Maryland. To date, with limited marketing efforts, the college has sold their services to clients in ten different states. On the following page appears a list of past clients of the Resource Centre. The Dacum Research Centre has been in operation for five years has recently become "externally oriented" with plans to pursue additional market opportunities.

The market for Holland College's educational and curriculum development services looks very good. The organization to date has sold their services to third world markets primarily due to available CIDA assistance. The College is made aware of potential project in these countries through various associations such as The Association of Community Colleges of Canada and through applicable CIDA divisions.

While the first logical step would be for Holland College to aggressively pursue market opportunities in Canada, there is excellent opportunity in the United States. The table below shows the number of public and private community colleges and vocational schools in the New England area, all of which represent potential markets for Holland College's services.

The manpower required to perform external consulting services depends on the number of programs being developed as well as the number of students in each program. Holland College currently has 20 people capable of providing consulting services if required. For example, in Belize, Central America, Holland College currently has two people working on a term assignment to assist the local educational facility in setting up a hospitality kitchen for educational purposes.

The presence of prospective free trade with the United States has not been an issue explored by Holland College, as present no work in being done in the area.

Other than the work being performed by Dundalk College in Maryland, Ohio University in Columbus, Ohio has established an independent centre, called the National Centre for

Education and Training for Employment. We understand that this organization is very aggressive pursuing market opportunities for their services as well.

The **MARYLAND DACUM RESOURCE CENTER** has provided direct DACUM services or training in the use of the DACUM processes to . . . .

EDUCATION ORGANIZATIONS IN MARYLAND

- Allegany Community College
- Anne Arundel Community College
- Baltimore County Career Development Center
- Calvert County Public Schools
- Carroll Community College
- Catonsville Community College
- Cecil Community College
- Charles County Community College
- Chesapeake Community College
- Community College of Baltimore
- Essex Community College
- Garrett Community College
- Hagerstown Junior College
- Harford Community College
- Howard Community College
- Wor-Wic Tech Community College
- Maryland State Department of Education/ Division of Vocational-Technical Education
- Montgomery College
- Montgomery County Public Schools
- Prince George's Community College

BUSINESS, INDUSTRY AND LABOR ORGANIZATIONS

- B. Frank Joy Company, Inc.
- Bethlehem Steel Corporation
- Bethlehem Shipyard
- Eastern Stainless Steel
- General Motors
- International Longshoreman's Association
- Mass Transit Administration
- Motor Vehicle Administration
- Preston Trucking
- W. R. Grace

EDUCATIONAL ORGANIZATIONS OUTSIDE OF MARYLAND

- Black Hawk College (Illinois)
- Cape Cod Community College (Massachusetts)
- Center for Education and Training for Employment (Ohio)
- Cuyahoga Community College (Ohio)
- Johnson County Community College (Kansas)
- Reading Area Community College (Pennsylvania)
- Spokane Community College (Washington)
- St. Louis Community College (Missouri)
- University of Delaware (Delaware)
- Washington, DC Public Schools (District of Columbia)
- Waukesha County Technical College (Wisconsin)
- Williamsport Area Community College (Pennsylvania)

EXHIBIT: NEW ENGLAND COLLEGES AND VOCATION SCHOOLS

School	Conn.	Maine	Mass.	New Hampshire	Rhode Island	Vermont
Public Commty. Colleges	17	5	17	8	1	2
Private Commty. Colleges	4	5	17	4	0	3
Vocational Schools	144	32	223	35	34	13

SOURCE: NEW ENGLAND BOARD OF EDUCATION

4.0 RECOMMENDATIONS

The following are considerations regarding the merit of more indepth analysis of each of the food product sectors:

Mussels: PEI cultured mussels have very exciting potential for growth in new export markets and for significant value added processing. However, the current situation with domestic demand for live cultured mussels exceeding supply means that P.E.I. producers might find new products and markets a premature next step in the growth of their industry. Nevertheless, given the long-term growth potential of this product, it warrants further study in Phase III.

Lobster: Lobster is P.E.I.'s most valuable fishery. U.S. carapace regulations threaten to interfere with the traditional export market for live lobster. Few companies are involved in value added lobster products. We recommend proceeding with developing an export strategy for value added lobster products.

Rock Crab: Rock crab is a relatively small fishery for P.E.I. However, its landings are a by-product of the lobster fishery; potential rock crab supply may be much larger than current landings. One processor is currently trying to develop this market and is interested in exporting to the U.S. We recommend proceeding with developing an export strategy for rock crab meat.

Potatoes: Potatoes are P.E.I.'s largest agricultural crop. Opportunities may exist for subcontracted processing and to develop other markets and niches for potato products. We recommend proceeding with developing an export strategy for value added potato products.

Cole Crop: Cole crops, specifically broccoli, cauliflower, brussel sprouts and endive, do not constitute a significant portion of P.E.I.'s existing agricultural base. These crops, and the value-added processing of them, may be suited to some farms and may have increased export potential in the future.

Bottled Water: The demand for high quality drinking water will continue to grow in the U.S. Canada is well positioned geographically, and well suited with the natural resource and marketing image. Canadian companies have the potential to be major players in the U.S. water industry, however, to do so they must be extremely well financed.

Following are considerations regarding the merit of more indepth analysis of each of the non-food product sectors:

Aquaculture/Aqua Health Products and Services: There are a number of existing and potential P.E.I. producers that could benefit from a study of the U.S. market opportunities in this product area. Because there would appear to be considerable growth potential in this field, we recommend developing a U.S. export marketing strategy for this product area.

Stem Culture Technology: While cloned blueberry plantlets appear to offer considerable *future* growth potential, the technology required to produce this product is still in the developmental stage. It is recommended that marketing strategies be developed for other product areas that have more immediate export potential.

Competency-Based Education/Computer-Assisted Training: Clearly, P.E.I. has considerable strength in the competency-based education/computer-assisted training field. The growth prospects for this learning technology appears promising. However, the benefits of a U.S. export strategy for this product area would

be limited to just one organization. We recommend that this opportunity not be studied further at this time.